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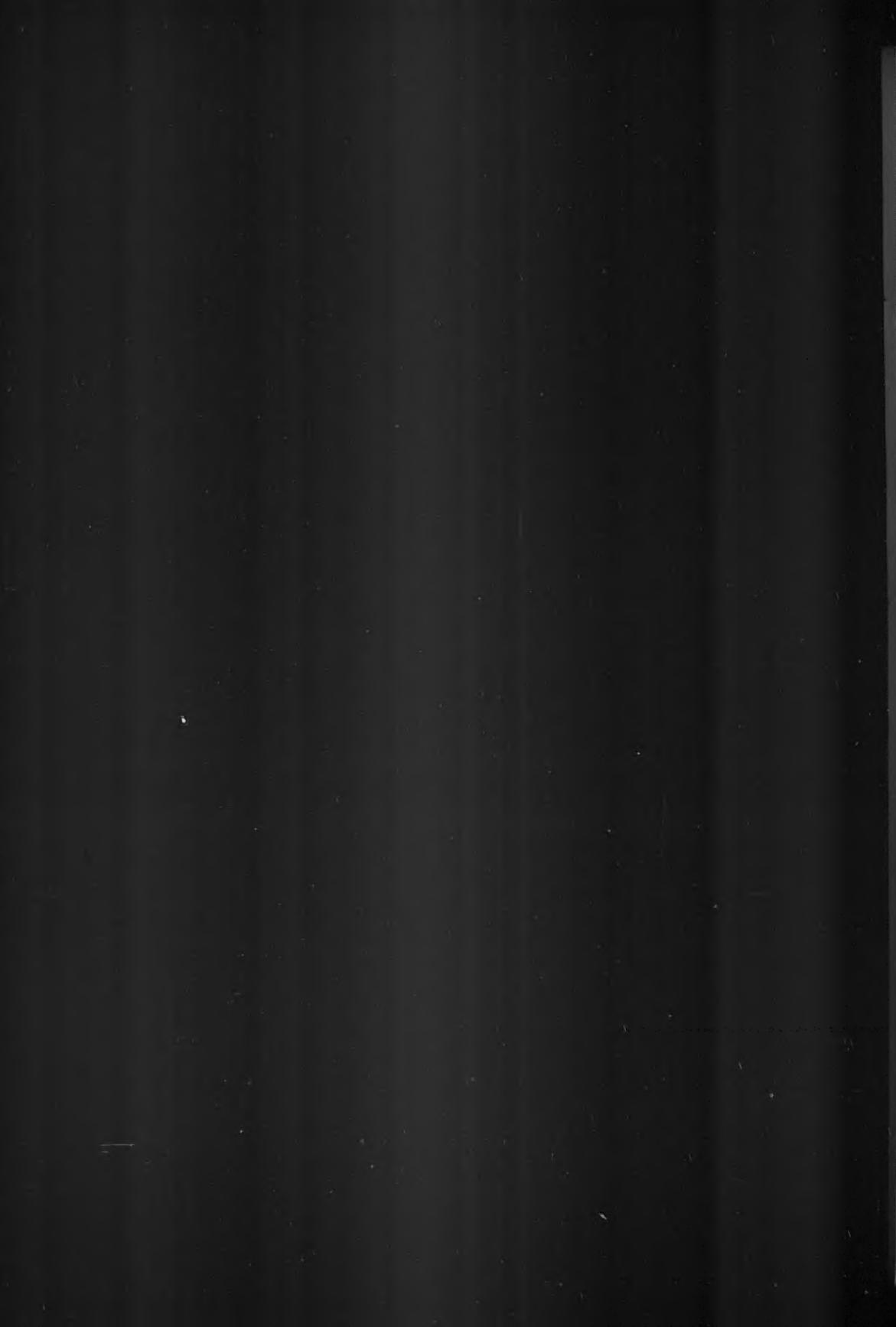
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HOME LIFE OF THE BLACK-TAILED GNATCATCHER

By ROBERT S. WOODS

WITH SEVEN PHOTOS ON FOUR BLOCKS

ONE of the most restricted in distribution of all the birds in the United States is the Black-tailed Gnatcatcher (*Polioptila californica*), which is found in certain arid, brushy sections of the Pacific slope of southern and Lower California. The observations set down herewith were all made on the San Gabriel Wash at Azusa, in Los Angeles County.

The habits of this species differ somewhat from those of the Western Gnatcatcher, and the name "gnatcatcher" does not appear to be so appropriate to it. Baird, Brewer and Ridgway (North American Birds, 1874) state that "at times it will dart about in the air in pursuit of small insects"; but after watching these birds many times at all seasons of the year the writer has found this to be a decidedly rare occurrence, although they sometimes do hover momentarily to pick something off a branch; and an occasional snap of the bill at other times suggests flycatching activities even if one does not actually see the birds. In the locality mentioned, at least, the food is practically all obtained by search through the branches of shrubs. The birds do not seem to care for water, either for drinking or bathing.

The Black-tailed Gnatcatchers do not wander much during the course of a year, and ordinarily it is possible to locate a pair at almost any time within an area of a few acres. They also confine themselves rather strictly to the brush, only casually visiting adjacent orchards or gardens. The call-note varies considerably, but may be distinguished from that of the Western Gnatcatcher by a certain querulous tone and it is very thin and plaintive in character.

The nest is deeply cup-shaped, sometimes slightly constricted at the top, and is compactly and neatly constructed of small pieces of grass, bark, fiber, paper, cloth, string, etc., and lined with small feathers, rabbit fur and soft cottony material. The interior measurements of three nests were $1\frac{1}{2}$ inches in diameter, by $1\frac{1}{4}$ inches in depth.

The nest shown in figure 29a, into whose construction small bits of newspaper had entered largely, was found on June 25, 1920, just as the young were ready to leave. The four young birds were arranged in two layers, and of one of those in the lower layer only the beak was visible; yet on leaving the nest all seemed equally vigorous and well developed. One of the bottom ones, how-

ever, remained in the nest an hour or two longer than the others (fig. 29b). The four were seen together in the neighborhood for some time.

About March 1, 1921, a pair of gnatcatchers (possibly from the brood just mentioned, which had passed the winter in the vicinity) started a nest near the top of a low sumac bush (*Rhus laurina*) about 2½ feet from the ground. The work proceeded rapidly at first, most of it being done by the male, and then gradually slowed up. By the middle of the month the nest, which was ready for the lining, seemed to be deserted, and a week later was found overturned and partially destroyed. This suggested a search for a new nest, which was found a day or two later about 125 feet away in a clump of cactus and weeds and about two feet from the ground. It was complete except for part of the lining, which was added to from time to time until finished, after which the birds showed no further interest in it.



Fig. 28. HABITAT OF THE BLACK-TAILED GNATCATCHER, SAN GABRIEL WASH, NEAR AZUSA, CALIFORNIA; PHOTOGRAPHED JUNE 30, 1921; A NEST WAS SITUATED IN THE CENTER OF THE LOW BUSH IN THE RIGHT FOREGROUND.

On April 22, by following the male gnatcatcher for a while, I located a third nest in a buckthorn bush (*Rhamnus crocea*) about 250 feet from the last. The site was much the best of the three, being about 2½ feet from the ground and in the midst of such a thick mass of twigs that the nest could not be clearly seen from any direction (fig. 30a). There were three eggs, grayish or bluish white speckled with reddish brown. The duty of incubation was divided between the two parents and the eggs were seldom left uncovered even for a moment. The birds showed no resentment at the presence of a human spectator, though the approach of another bird within perhaps fifty feet of the nest was often the cause of fierce demonstrations on the part of the male gnat-

catcher, and they would scold vigorously at the appearance of a cat even outside of the nesting season.

The young were hatched out on May 3 and left the nest nine days later, on May 12. They remained in the same clump of bushes until the next day, when in response to urging by the parents they made several moves to other bushes. It would seem to require a well developed memory for location to enable the old birds, on returning from a distance with food, to find the young ones; for they sit quietly in the interior of a bush surrounded by many other similar bushes. On two such occasions I saw the mother bring food to a bush which the young had left some time previously. After searching for a while and then calling without answer from the young ones she appeared to recollect and flew at once to them.

The food furnished consisted of a large variety of small insects and spiders. The larger insects were first thoroughly beaten against a branch. The



Fig. 29. *a*, FOUR YOUNG BLACK-TAILED GNATCATCHERS. *b*, SAME NEST LATER, WHEN ONLY ONE YOUNG REMAINED. NEST ILLUMINATED BY SMALL MIRROR; BOTH PHOTOGRAPHS TAKEN JUNE 25, 1920.

largest insect noted was a walking-stick which, being nearly as long as the young bird, required considerable swallowing. One of the brood disappeared a few days after leaving the nest, but by the first of June the other two were beginning to hunt their own food and could be distinguished from the mother only by the greater amount of white on their outer tail feathers.

On June 8 an inspection of the nest showed that a section of it had been removed, and it was found that only a small portion of the unused nest previously built remained. A short search in the vicinity of the latter revealed a nest containing three eggs, about 50 feet away. The situation (see fig. 28) was similar to that of the nest used before, except that the foliage was less dense, and was also very similar to that of the nest found the previous year. The nest (fig. 30b) appeared a little looser and bulkier than those built of new materials. As previously, the male seemed anxious to do his full share of the incubating and would sometimes almost force his mate from the nest. While

on the nest he maintained a vigilant watch, frequently peering over the edge and closely scrutinizing the ground beneath. The female evidently occupied the nest at night, as well as part of the day. The two young gnatcatchers were not allowed to loiter near the nest.

On June 21 newly hatched young were found. The exact time during which they occupied the nest was not determined, but it was at least a day or two longer than in the previous case. This was not due to their remaining until a later stage of growth, but to an actual slower development. The nest



Fig. 39. *a*, MALE BLACK-TAILED GNATCATCHER NEAR NEST, THE LATTER BEING SITUATED IN DENSE GROWTH AT LOWER LEFT; PHOTO TAKEN MAY 10, 1921.
b, FEMALE GNATCATCHER ON ANOTHER NEST; PHOTOGRAPHED JUNE 10, 1921.

being only partially shaded, the male was accustomed to stand in it a large part of the time during the heat of the day in order to protect the young from the sun (fig. 31a). The nest and its surroundings were left in a perfectly clean condition. The young remained with the parents until early in August, after which the original pair continued to occupy the same territory, while the young drifted off together to other hunting grounds.

A certain degree of individuality was noticeable among the various gnat-

catchers. In the case of the pair nesting in 1920 the male invariably followed the female from bush to bush while hunting together. This female was notable for the decidedly brown tone of the back and wings, contrasting with the clear gray of the male. The male whose photographs appear herewith showed at all times an independent and fearless disposition. His mate, after each brood was hatched, at first refused to visit the nest while a person was near, but soon gained confidence. Under other circumstances she occasionally indicated marked curiosity by approaching silently to within arm's length or hovering close above one's head.

It does not seem to be generally known that the black cap of the male Black-tailed Gnatcatcher is present only in spring and summer plumage. Hav-



Fig. 31. *a*, MALE BLACK-TAILED GNATCATCHER SHADING YOUNG FROM SUN;
ILLUMINATED BY REFLECTED LIGHT; PHOTO TAKEN JUNE 30, 1921. *b*,
MALE BLACK-TAILED GNATCATCHER; PHOTOGRAPHED MAY 13, 1921.

ing previously noticed the absence of black-capped birds during the fall and winter months, I was able, by systematically watching the male here shown, to observe the changes in the color of the cap. About the middle of February black patches appeared on the crown and quickly spread over the entire top of the head. The reverse change in the fall took place much more slowly and in the form of a gradual obscuring and replacing of the glossy black by gray. The first signs of gray could be detected about the middle of July and it required approximately a month and a half for all traces of darker color, with the exception of a permanent blackish streak above the eye, to disappear. The change appeared to be complete before the new tail feathers were entirely

grown out. It might also be mentioned that the white edgings of the tail, which in fall and winter are conspicuous and readily apparent in flight, become much restricted or entirely wanting in summer plumage.

Owing to the nature of their feeding grounds not much can be said as to the economic value of Black-tailed Gnatcatchers, but they consume large numbers of moths, which doubtless include some injurious species.

Los Angeles, California, September 10, 1921.

NOTES ON FALL MIGRATIONS OF FOX SPARROWS IN CALIFORNIA

By JOSEPH MAILLIARD*

WITH the idea of learning more about the fall movements of some of our fox sparrows, and particularly those of the Yolla Bolly Fox Sparrow (*Passerella iliaca brevicauda*), in the autumn of 1919, in company with Mr. Luther Little as assistant, I made a trip to a place on Eel River, near the southwestern base of Mt. Sanhedrin, on the summit of which the latter species is known to breed. The week of September 15 to 20 was passed here, but we found that there was no good fox sparrow country within workable distance of our headquarters. That some were passing through the locality was proved, however, by the sight of two individuals on the morning of September 20, neither of which was secured for identification; but these were evidently of the smaller billed, dark group from the northwest coast, southern Alaska to British Columbia, designated by Swarth as the "Unalascheensis group" (Univ. Calif. Publ. Zool., vol. 21, 1920, p. 89).

My brother, John W. Mailliard, arrived on the afternoon of September 20, and placed his services and car at our disposal for the ensuing week. On account of the lack of good country for observation here it was decided to run up to Lierly's, a well-known hunting resort at a more appreciable elevation and nearer to the summit of Mt. Sanhedrin. During the next day the party identified 37 species of birds, but the only fox sparrow seen was again one of the above group. On September 22, my brother and Little went up to the top of Sanhedrin to ascertain if the Yolla Bolly Fox Sparrows were still there. Several of these were obtained. Having proved this point, we moved next day to Glenbrook, Lake County, just north of Cobb Mountain, at an elevation of 2300 feet. Near this spot is a large tract of brushy territory containing a considerable mixture of ceanothus and manzanita brush, upon the seeds of which the fox sparrows largely subsist.

On the morning of the 24th we went up a few hundred feet higher into this brush country, and immediately commenced to get results. Fox sparrows were not so very numerous but would occasionally appear or could be "squeaked up" from time to time. While none of this genus had been found here during our visit from April 28 to May 3, of the previous spring, the local-

*Contribution No. 127 from the California Academy of Sciences.

ity seemed to be a good place in which to intercept migration. The weather was rather warm at this time and, toward noon, as the sun's rays became more intense, the sparrows kept so close to cover that our work had to be postponed until early the next morning.

I had figured on finding some of the Yolla Bolly Fox Sparrows in this place, working down from the higher altitudes of the Sanhedrin range to the north, and was pleased to find the expectation correct. In fact, 60 percent of our take here was of this species, showing that it leaves its breeding ground at about the same time as the earliest northern migrants commence to arrive or, as one might say, drift in.

We passed but two days at Glenbrook and then went back to our former collecting ground at Castle Hot Springs, at an elevation of 2800 feet on the Mt. St. Helena Range, Lake County, just south of Cobb Mountain. Here there is some very good brush country for fox sparrows, at about 3000 feet and upward.

The morning of September 26 was a very warm one. My brother and I went in one direction and Little in another. We went through some forest along an old mining trail into some good-looking brush, securing a few specimens, but soon the heat became so intense that we returned to a woody canyon that ran up through the brush, and camped down near some small pools of water. It was not long before a fox sparrow appeared, and another and another! Soon we discovered that there was a regular stream of them coming to the water holes. We could see only for a few yards on any side and could not well make out whether the birds were approaching from any special direction, but most of them appeared to be coming up the narrow bed of the dry arroyo toward the tiny spring that still contained water, and to a few small holes in the rocky bottom that had a little water left over from an unusual summer rain. The season had been a dry one and water was scarce in the vicinity.

We obtained a number of specimens, of several different subspecies, never knowing what the next one would prove to be, and later found that Little had been equally successful on the brushy hillside where he had been working, which was along the road leading to the springs. A large number of fox sparrows were moving in the brush there, and many flew across the road. Little's notes relate that "the fox sparrows were very abundant and, as they flew about making a thrush-like noise, or better yet, the junco note, I thought the country must be overrun with thrushes or juncos." None of us had ever before in our lives seen such a number of these birds at any one time.

This movement recalled to my mind a late September day, many years ago, when I was staying with Mr. William Kent, at Kentfield, Marin County, California, when we were deer hunting on a spur of Mt. Tamalpais. At one time during that morning, as I was sitting on a rock overlooking a steep, brushy canyon, I noticed a most curious rustling on all sides below me, which I could not at first account for. After watching for a while, I caught sight of a fox sparrow scratching under a thick bush near by, and it gradually dawned on me that this subdued, but vast—if such an expression be allowed in this case—rustling was being produced by a great number of individuals of this bird group scratching for the seeds among the dead leaves of manzanita and ceanothus bushes. As but few of the birds came to the surface of this sea of

brush it was difficult to see them or to get an idea of what subspecies they belonged to, and, most unfortunately, we had nothing smaller than rifles with which to collect any for identification. This was certainly a regular "wave" of migration; and in all my years of hunting and collecting at the old Rancho San Geronimo, only about five miles north of this spur of the mountain, with equally brushy areas and at about the same elevation, I had never encountered one like it.

But to return to Castle Springs: About the middle of the morning we had enough specimens to keep us busy for the rest of the day, so we returned to headquarters and went to work saving them, which took us until six o'clock in the evening. About that time a breeze came up and it commenced to cool off quite rapidly. The breeze soon developed into a howling gale and sleep was impossible that night in the tent-house we were occupying.

A dense fog drove in with the gale and by morning everything was dripping, with the prospects anything but alluring for favorable observation. My brother had to return to his own home that day and the outlook for better weather was so poor that I decided to take advantage of his transportation facilities and drop down to Harbin Springs to see what was going on at a lower elevation, where the weather was apt to be more favorable for us. But the next day it commenced to rain and the bushes were too wet to work in. As soon as the weather permitted, we resumed our observation of fox sparrows in the surrounding brush, which was fairly well adapted to their needs. It seemed as if the rain should have made ideal scratching ground for these birds but, while we found a few there, they were not numerous, and even these became scarcer as the days went by. Soon they became so scarce that we concluded the "run" must be over and that it would not pay us to remain longer.

Of the different individuals taken were many that were very difficult to place satisfactorily. At Glenbrook, September 23 and 24, the Yolla Bolly Fox Sparrow was the most numerous, comprising 60 per cent of the number secured, but at Castle Hot Springs, of those taken during the migratory wave of September 26, 1919, the percentage of this subspecies was 30. This sparrow was usually easily recognized, even in the brush, where not too dark to see it well, as its grayish back and light colored breast were quite conspicuous among the more reddish or brownish races. Evidently this race begins to forsake its breeding ground long before harsh weather conditions compel it to do so, as the comparatively low elevations at which it breeds in California—5000 to 6000 feet—are not particularly cold nor subject to severe snow storms as early in the fall as the date at which we found it common.

The greater number of the Unalascheensis group, that is of the darker, more reddish, and more slender-billed races, which we secured are referable to the forms Valdez, Yakutat and Sooty Fox Sparrows (*Passerella iliaca sinuosa*, *annectens* and *fuliginosa*, respectively), with a good deal of intergradation between, and the first two predominating in numbers; yet there were a good many individuals that we could not place. There were also one or two other races represented by a stray bird here and there.

In order to ascertain if the wave of migration was an annual occurrence I went again to Castle Hot Springs in 1920, taking with me Mr. Chase Littlejohn as assistant. So as to be on the ground in plenty of time to observe the migration, should it occur, September 19 was the date selected for the com-

mencement of our vigil, as being a week earlier than the date of the big wave of 1919.

That morning found us in readiness for any sized wave that might come along, but none came that day nor for a good many days thereafter. We found a few fox sparrows scattered through the brush, and tried by various means to watch them, as well as to secure specimens for identification, finally coming to the conclusion that the best method was to camp down near some of the far from numerous water holes and wait to see what might come to drink. We cleared the trash from under the thick brush so that we could see a few yards around about and kept still for hours at a time.

Of those which we saw under these conditions, some certainly came there to bathe and drink, but a good many appeared only to be passing along, often chirping the characteristic fox sparrow note, so much like a similar note of the juncos. Evidently the Yolla Bolly Fox Sparrow, which was almost the only form we saw for the first few days of our stay, was dropping down, just as at Glenbrook, from its comparatively near breeding grounds which extend from Mt. Sanhedrin, Snow Mountain, etc., up into the Yolla Bolly and Trinity ranges. Probably the birds we first saw were from Sanhedrin and the adjacent mountains not much over 60 miles away, while the later ones came from the more northerly ranges.

The only way to find out what subspecies were passing through was to secure some specimens each day. Some days we would obtain only one or two apiece, while on others we would do a little better, but toward the end of the month there was a very decided increase in the numbers noted although nothing that could be described as a "wave" had materialized. It appeared as if the migration this year was just a sort of drifting process and it did not seem worth while for both of us to stay to watch this, so I decided to return to San Francisco, but to leave Littlejohn for a few days longer just in case something might happen. We had been breakfasting on cold bread and milk at daylight so as to reach the observation grounds as soon as it was light enough to see clearly. On the morning of September 30 I was all packed up to leave and was breakfasting at the civilized time of 7:30 when Littlejohn, who had gone out at our usual early hour, came in breathless to say that when he reached the grounds "the hillsides were alive with fox sparrows".

According to his description they were coming in bunches from the north, numbers settling in the brush or along the road for a few moments to scratch, while others appeared and passed beyond, the different bunches thus constantly overlapping as so often do blackbirds when feeding in flocks, those in the rear continually rising and flying ahead of the advance guard.

Hurrying back in all haste to my quarters, unpacking and getting the necessary paraphernalia together, I made the best speed of which I was capable up the grade to the spot, but arrived just in time to be too late. Not a sparrow was in sight. The rest of the morning was passed in the hope of a second wave appearing but nothing of the kind happened. We secured a few scattering specimens, but that was all.

Still in the hope of a repetition of the occurrence we remained here until October 5, and I was partially rewarded by the advent of at least a small wave which, insignificant as it was in size, gave me an opportunity to see what the actions of the individuals composing it were like.

This migratory wavelet was noted on the morning of October 4, just before sunrise. As I reached the extremity of the brush-land where, around a sharp spur, the woods commenced again on the north side, I ran into this small band of new arrivals, perhaps a dozen or so. As expressed in my notes taken at the time these birds "came out of the brush like flying fish out of a wave" and dove in again a little farther on, but whether they came up out of the woods on the north, or had flown clear across the deep canyon over the tops of the trees from Mt. Cobb, I had no way of judging as I was a few seconds too late to see just in what manner they had landed on this spur. After a while we went down to the places which we had cleared around the water holes and soon noted birds that appeared to be new arrivals, as they were very thirsty.

It would seem from these observations that the fox sparrows travel extensively in the night and early morning. The wave of 1919 was much larger than anything we saw in 1920, and the birds seen in that case had evidently camped down for the day, the intense heat of which induced them to seek water, thus creating the activity which we observed.

As before remarked, almost all the birds first taken at Castle Hot Springs were the Yolla Bolly Fox Sparrow; but by September 28 the ratio commenced to change and toward the last of our stay the proportion was very small, the average being about 38 per cent for the whole period of observation.

Of the other subspecies taken, practically all belonged to the *Unalaschensis* group, but they seemed to run rather darker than those of the previous year. Many of these I have placed with the Yakutat and Sooty forms (*P. i. annectens* and *fuliginosa*); but few, however, are typical, and there are many individuals which neither Mr. H. S. Swarth—who is our best authority on fox sparrows today—nor I can satisfactorily place, this being true of many of those taken in the fall of 1919 as well.

These undetermined individuals appear to belong somewhere between the Valdez and Sooty Fox Sparrows as before remarked, although none approached the more reddish race, *townsendi*; but as a whole they are so nearly homogeneous that it seems as if there might be some locality to the north of us, unexplored as far as fox sparrows are concerned, which may prove to be the breeding ground of a more or less distinct race, and from which these at present undetermined birds come. Meanwhile these particular specimens lie in our cases with the label marked "subsp.?" There is a good deal yet to be learned about our speckle-breasted friends, the fox sparrows.

San Francisco, September 8, 1921.

THE MIND OF THE FLOCK

By R. C. MILLER

THE BEHAVIOR of individuals in a group affords one of the most puzzling problems of psychology. Throughout the animal kingdom we find among gregarious forms a unity of purpose and a tendency to concerted action which does not readily yield itself to explanation. The synchronous flashing of fire-flies; the manner in which the gregarious larvae of certain saw-flies curl their tails upward by a common impulse when approached; the well-ordered flight of wild geese, or the intricate gyrations of a flock of Golden Plover, a hundred birds darting and wheeling with a grace and precision which no amount of training could impart; the behavior of stampeding sheep or cattle; the conduct of men at a political rally, or at a lynching; these are random examples of a unified type of action characteristic of groups.

It is axiomatic that the mind of the group is a very different thing from the sum of the minds of the individuals composing it. As Le Bon (1897, p. v) observes of crowds, "from the mere fact of their being assembled, there result certain new psychological characteristics . . . (p. 6) just as in chemistry certain elements, when brought into contact—bases and acids, for example—combine to form a new body possessing properties quite different from those of the bodies that have served to form it". But this analogy, admirably as it states the case, hardly helps us towards an explanation of it, since the origin of the new properties insisted upon is quite as obscure in the one instance as in the other.

The special characteristics of organized groups, according to Le Bon (*loc. cit.*), are three: suggestibility, contagion, and the possession of a sort of collective mind. As he announces shortly that contagion is an effect of suggestibility, there seems to be no good reason for considering these items separately; suggestibility, furthermore, can hardly be discussed apart from its relation to the collective mind; the real problem of the group psychologist is, therefore, to find an adequate explanation of the group mind.

It was assumed by the earlier observers, with a placid anthropomorphism, that the animal flock is organized somewhat on the plan of a military company, with a regularly appointed leader who directs the movements of the group by means of signals or even vocal commands. Such a conception seemed particularly plausible in the case of the avian flock, where there is often apparent evidence of a leader and where, moreover, there is unquestionably an exchange of vocal signals more or less meaningful. I recall reading, on one of my first excursions into natural history literature, a learned account of the language of crows, which undertook to explain the flock behavior of these birds on the basis of "caws" of varying number and intensity uttered by the leader, and even ventured a tentative crow-vocabulary. Unfortunately I was unable to profit by this information, as the crows of my acquaintance apparently spoke a different dialect!

With the application of critical methods to the study of animal behavior, it became evident that birds are not diminutive human beings with wings and feathers, and the old explanation was found no longer to suffice. Thereupon the pendulum swung in the opposite direction, and it was insisted that the behavior of the flock, with its unity of impulse and remarkable coördination of

action, is inexplicable in terms of the five senses, and must be based upon principles of which we have no definite knowledge.

As a result of this conception, there has been a tendency to speculation rather than careful study, and certain of the phenomena of group behavior have been adduced as evidence in support of various mystical beliefs.

An English writer who is presumably a very good naturalist has lately advocated the opinion (Newland, 1917, p. 104) that every sentient being is an incarnate fragment of the All Mind; hence the members of a flock act in unison because they are directed by a common intelligence. Still more recently it has been insisted by Long (1919, p. 74 ff.) that a mysterious "natural telepathy" is responsible for the passage of impulses from individual to individual in the animal flock. Dogs, wolves, caribou, Indians and Bushmen, he thinks, are possessed of a "supersense", an extremely useful appurtenance which civilized man has been careless enough to lose. Numerous other examples of more or less extravagant interpretations might be cited.

Unfortunately for such views, the group-mind is not at all the perfect instrument that they assume. It often stumbles in a manner unworthy of an All Mind, and hesitates in a fashion inconsistent with the idea of a perfectly functioning natural telepathy. Furthermore, we are able to trace among gregarious forms a progression from a simple to a complex type of organization; in the case of the more loosely organized groups we are able to explain behavior in terms of known facts of psychology, and it is logical to suppose that greater complexity is a difference, not of kind, but of degree only.

In a previous paper (Miller, 1921) attention has been called to the Bush-tit (*Psalttriparus minimus*) as a bird manifesting a relatively simple and loose flock organization. Coördination here takes place as a rule rather slowly, and the observer is able to witness the actual steps in the process.

When the Bush-tits behave at all as a unit, it is by the method that I have termed the "spread of impulse". If the flock moves from one place to another, it is because one bird, or occasionally two or three birds at a time, are stimulated by hunger to a change of location; the impulse spreads, not telepathically, but through the ordinary channels of sight and hearing, and the flock follows suit. If an enemy appears, it is sighted perhaps by only one or a few of the flock; from them the impulse spreads, almost instantaneously in this case, but through the medium of sound, to the others, so that those birds who may not have seen the enemy unite in the "confusion chorus". There is nothing in their behavior to suggest telepathy, or any mysterious type of psychic communication. Indeed a practised observer is often able, by noting the nature of the initial stimulus, to anticipate the reaction of the flock, although it is hardly to be supposed that he has for the moment become identified with what Newland (*loc. cit.*) has called the "group soul."

The movements of a flock of English Sparrows when unmolested are similar in certain respects to those of a band of Bush-tits; a few birds take the lead and the others follow. Kessel (1921) has observed that the California Valley Quail are "stimulated to flight by the leader," which he suggests further on may be any member of the flock that takes the initiative for the moment. It is stated by Woodward (1921, p. 138) of the collective soaring of gulls that "they start with perhaps a dozen or two birds, but these are soon joined from all directions by other gulls in two's and three's until 100 to 200 birds are in the air at once". Thus the spread of impulse through the group

is by no means a phenomenon peculiar to the Bush-tits, but one appearing in widely separated species of bird.

Elsewhere in the animal kingdom we find parallel examples, suggesting that this type of behavior is still more generally distributed. Dr. E. C. Van Dyke informs me that the saw-fly larvae above referred to do not react simultaneously as has been claimed (Newland, p. 38), but that the impulse can be observed to spread from individual to individual, probably as a tactile stimulus. Groos (1898, p. 208) remarks of gregarious mammals that "the playful act of one animal spreads through the whole company like a sudden contagion", and observes, "when one cow in a herd leaps down the slopes where they are grazing, a large part of the herd will often follow".

The behavior of crowds is essentially a phenomenon of the same sort. We do not see a thousand men become wildly enthused, or angry, or panic stricken in an instant. A few individuals are first moved by these emotions; by voice, or gesture, or appearance, their state of mind is conveyed to their immediate neighbors; the impulse spreads until the whole group is affected; their own shouts and cries excite them further, until we may witness a crowd of intelligent men shortly converted into an unthinking mob, with a unity of purpose which may lead to the most heroic or the most senseless acts.

A "Go West" movement or a Klondike stampede are phenomena essentially similar to the movement of a flock of Bush-tits from one chaparral clump to another.

An analogy may be drawn between spread of impulse in the group and the spread of an impulse through the nervous system of certain invertebrates. In a medusa, for example, or a sea-urchin, the part of the body immediately stimulated first responds; coördination of action takes place slowly, spreading from part to part, until at last the whole organism is in motion. No part controls the rest. No reactions are controlled by the central nervous system. Von Uexküll (1909, p. 118) has called the sea-urchin a "republic of reflexes", and remarks ingeniously that "the legs (spines) move the animal", as contrasted with the higher animals, where "the animal moves the legs". Which-ever part takes the lead depends upon circumstances, and the rest of the body gradually coöperates.

Thus there is evident a comparison between coördination of action in a simple animal and coördination of action in the group. The flock behaves as a sort of *primitive organism*.

Indeed it has been insisted by Huxley (1912, Chap. V) that any organized group may rightly be considered a form of individual. Whatever individuality the flock possesses, however, is usually of a very vague and imperfect type; the individualities of the component parts are incompletely merged with the individuality of the whole, and may even come into conflict with it or with one another, as when a band of Bush-tits undertakes to move in two or three directions at once (Miller, 1921, p. 126); "the legs move the animal"; the individuals move the flock, rather than the flock the individuals.

In all the instances cited there is nothing which may not be explained with good reason on the basis of the spread of impulse through normal physical channels. There may indeed be a hyper-sensitiveness to suggestion, a tendency for the individual to be alert and readily responsive to impulses coming from his neighbors, but this, as Trotter (1916, p. 108) observes, is one of the fundamental characteristics of gregarious animals. We have no occasion to

call in the assistance of natural telepathy or any other peculiar psychic force to explain the facts. Such explanations merely reduce the known to terms of the unknown, and claim to have solved the problem when they have only avoided it.

That organized groups are possessed of a more or less definite "aggregate mind" there seems to be ample evidence. That this collective mind exhibits certain peculiar properties distinct from those of the individual minds composing it, few will deny. But that these properties are of a hypnotic (Le Bon, p. 10) or telepathic (*Long, loc. cit.*) nature, satisfactory evidence is lacking. It is the belief of the writer that the spread of impulse—exceedingly rapid in well organized groups, slowly enough to be readily observed in less unified aggregations, but always through the normal channels of sense—is entirely adequate to explain the mind of the flock.

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Department of Zoology, University of California, October 4, 1921.

NESTING PINE GROSBEAKS IN PLUMAS COUNTY, CALIFORNIA

By RICHARD HUNT

IN THE SUMMER of 1920 I went camping with a party of people, ten miles south of Blairsden, Plumas County, in the yellow pine and silver fir belt at an elevation of 6300 feet. The country was attractive from the point of view of the vacationist, with good hiking in all directions and many beautiful little Sierran lakes within easy "striking distance" of camp. My own main idea, like that of the rest, was merely to have a good time, and no ornithological thoughts were uppermost in my mind; but I had not been in camp two minutes before I realized that we were in a region of California Pine Grosbeaks (*Pinicola enucleator californica*).

The first Grosbeak was pointed out to me as I arrived in camp with grip in hand. The bird was a male in red plumage, sitting motionless on a pine branch about 20 feet up, where it remained unconcerned while several of us walked round freely under the tree viewing our visitor from all sides.

Early next morning I woke in my sleeping bag (see editorial note in *CONDOR*, xxii, 1920, p. 161) and lay there scrutinizing the tree top world above me for bird life. I saw two Pine Grosbeaks fly to a lodge-pole pine sapling, and there was something business-like in their manner of flight that suggested nesting birds. When I was dressed I investigated and found the nest exactly where the birds had flown. They had not approached it by a "trick" route as some birds do. The nest was 20 feet up, and contained three young almost ready to fly. This was on July 12.

Since there were people in the party who would not have appreciated my motives if I had "collected" the grosbeak family together with the nest, and since I myself felt that more might be learned by gathering what little "life history" material I could between hikes and other activities on the camp program, I adopted the "life history" policy. I began by putting in a good deal of spare time trying to get some photographs with the only "camera" I had, a "Brownie 1A Folding". I climbed a neighboring sapling to a level with the nest, and waited for the parent birds to come and feed their young. Two facts made this business harder than it sounds: first, the branches of the tree grew downward so sharply that my feet slipped off, and I had to remain in place by main hug of legs; second, the young were fed only about every twenty minutes. After much waiting and leg discomfort I snapped my kodak at an instant when both parents were perched on the rim of the nest feeding the young. It was a wonderful picture, the only trouble being that it never "came out"! I "took" some more pictures too that were wonderful barring the fact that they did not come out afterwards. As a photographer I later realized that I was registering about zero percent.

Three days later, July 15, the young left the nest. One of them disappeared for good. Another was heard peeping in some alders bordering the camp for two days. The third fell into the hands of the philistines and more or less stayed in camp as general property for two days. For this I was responsible, for I discovered the youngster about ten feet up in a small pine, and climbed up with my kodak, hoping that the parent birds would come with food. The female ventured near, but did not quite dare feed her baby, with me six feet away. So I caught the young bird, who made no effort to elude

me and showed no fear, and placed it on a favorable perch near the ground in camp, where I again waited a long time for the old birds to come. Although they did not seem concerned because I had their offspring, they nevertheless were cautious about venturing too near. Just once the female did come out into the open where the youngster was, and I snapped my kodak at the two side by side on the branch. This picture, like all my others, was excellent, *in itself* and as it existed in nature irrespective of my attempt to *take* it.

There were several children in our party and they all wanted to take turns "having" the young bird. And so for two days it was passed from hand to hand, and was made to perch, peeping plaintively, on wrists and arms and shoulders and hats. Even the older members of the party had to have their turns. One member, a better photographer than I, who also, however, had only a kodak, actually *took* pictures (that "came out" afterwards!) of the bird as it perched on various peoples' hands, heads, etc. During all this handling the little bird remained utterly fearless.

On July 17 it had disappeared. After this date the parent birds were no longer in evidence round camp, our only intimation of their existence being very occasional call notes sounding from well outside the limits of camp. On July 23 I sawed down the empty nest.

Whatever information of interest concerning the California Pine Grosbeak I may have collected during my few days of observation ought to make itself known to the reader as I compare my own experiences with those of some other observers or collectors, especially with the facts recorded by Milton S. Ray (CONDOR, xiv, 1912, pp. 157-187).

In regard to date of breeding, Ray quotes W. W. Price (p. 159) as follows: "They breed late, as attested by two nestlings brought to me July 29 . . .". The first nest that Ray found contained two eggs on June 17, and the second contained three eggs on June 18 (pp. 180 and 182). The Misses Alexander and Kellogg, collecting at Independence Lake, Nevada County, took six full-grown and nearly full-grown young (and four moulting adults) on August 9 and 10 (nine of these in 1910, and one the previous year). My nest, as already stated, contained three young nearly ready to fly on July 12.

As to elevation, Price (as quoted by Ray, p. 158) stated that the bird "is strictly an alpine species; I have never seen it below 7000 feet and I have taken it near the timber-line. It is peculiar to the belt of tamarack pine (*Pinus murrayana*), and the beautiful red alpine fir (*Abies magnifica*), and most of the specimens were taken in groves of this latter tree." The two nestlings mentioned by Price (p. 159) were found "at about 9000 feet elevation." Chester Barlow (as quoted by Ray, p. 161) said that he found Pine Grosbeaks among red firs, and that the bird is "seemingly a species of irregular distribution, not occurring below 6,000 or 7,000 feet." Ray found his first Grosbeak nest at 8500 feet well up toward "the limit of the timber which is at about 9250 feet elevation" and well into the snow belt at the season when found (pp. 177-178). His second nest was also among snow (p. 182) between 7000 and 7600 feet (see table, p. 187), and, I gather (p. 182), among firs and hemlocks. The birds taken by the Misses Alexander and Kellogg, already referred to and comprising in all six full-grown young and four adults (now nos. 10456 and 17113-17121 in the collection of the University of California Museum of Vertebrate Zoology) were collected at 7000 feet. J. Grinnell (pp. 106-107 of his "Distributional List") says, "The lowest elevation in the state at which

the species has been found at any season is Cisco Butte, 6500 feet, Placer County, October 6, 1913 (Mus. Vert. Zool.)." In comparison with all of this, my birds were found at 6300 feet well below the lowest snow patches among lodgepole pines and silver firs and not far above the highest sugar pines.

The ten birds collected at Independence Lake, Nevada County, constituted the northernmost record of range for this species till my own birds were recorded from the locality already herein referred to in Plumas County.

Various field observers have remarked the Pine Grosbeak's tameness. Price (as quoted by Ray, p. 159) observed that this bird, when visiting salt licks, "was at all times exceedingly fearless and unsuspicious." Ray found his nesting birds so tame that they had to be "urged" off the nest (pp. 180 and 182). In getting pictures of one of the nests (p. 182) "it was necessary in all to flush the bird forty-one times. No photographer could wish for a more willing subject, for she promptly returned on each occasion. The bird was utterly fearless, coming at times very close to us and seeming rather puzzled than alarmed or angered by our aggressive operations." I did not find my nesting birds so tame as all this. Though they never seemed much excited or perturbed, they nevertheless at all times remained prudently at a distance from me when I approached or stayed near the nest or the nestlings.

Price is quoted by Ray (p. 160) in regard to the food of the Pine Grosbeak. "The crop and stomach of an adult contained the soft leaf ends of *Pinus murrayana* and *Abies magnifica*, besides seeds and portions of various insects." I observed my birds nipping off tender buds of fir, and doubtless it was this food, with an admixture perhaps of other material, that I saw them feeding to their young, by regurgitation.

My Pine Grosbeak nest (now no. 1831, Mus. Vert. Zool.) is in a general way like the nests described by Ray (pp. 184-185). It is an outside construction of twigs, lined with small crinkly roots. The outside measurements are 8 inches across by 3½ deep; the inside, 3¼ diameter by 1¾ deep. The nest was placed on a horizontal forked branch about 3 inches from the main trunk (at this height 1¾ inches in diameter), and supported laterally by branches growing on a level with the rim. It was not attached to its support, but was fairly well *crammed* between the supporting branches and was reasonably firm. The eggs could have been seen through the bottom. It was, as already stated, 20 feet up in a lodge-pole pine: this in comparison to the three heights mentioned by Ray; namely, "on the lower branches of a fir" (p. 159), "sixteen feet up" in a fir (p. 178), and "35 feet up, eight feet from the trunk of" a hemlock (p. 184).

Finally, as to the utterances of the California Pine Grosbeak. The "peculiar melodious twittering" mentioned by Ray (pp. 178 and 183) I do not remember having heard.

The call note I remember well and made records of it on the spot. It most decidedly reminded me of the Western Tanager's note, which I would never think of spelling "churtig" as Ray does (p. 183), but which has at all times sounded to me so nearly like "pretty" that it seems strange that anybody could hear it much differently. The Pine Grosbeak's call so closely resembles this tanager note, in my estimation, that one not knowing otherwise might well conclude that it indicated a family relationship. The Grosbeak's call has still another non-family or "accidental" counterpart in the call of the California Thrasher—the brisk "qui-lit" so well known to most observers. The Gros-

beak note, however, resembles the tanager call more closely than it does the thrasher call. I spelled it *prilly* or *prilleh*. There is something musical or pleasing-to-the-ear in its timbre, as suggested in the letters "r" and "l". The vowel sounds are easily determinable. In manner of delivery it is rather lively, and the expression is somewhat querulous or enquiring.

As to the song, which I had opportunity to hear for many successive days, as sung both by "my" Grosbeak and by others in the same general vicinity: never, by any possible stretch of the imagination did I hear a song in the slightest degree bringing to mind the song of the Black-headed Grosbeak, which Ray (p. 178) says it resembles. It is utterly different in timbre, in form, in pitch—in every essential. The timbre of the Black-headed's song is round and smooth and mellow; that of the Pine's is vibrant and musically rough, or "burred" in a silvery-toned sort of way. The song of the Black-headed is easy and fluent; that of the Pine is forced and fricative. In form I have found the song of the Pine Grosbeak far from the elaborate affair described by Ray. The very longest songs I heard were not "varied" to any notable extent, nor were they prolonged enough to contain a "series" of anything, let alone "trills, warblings and mellow flute-like notes." The typical song, so far as I have been able to discover, is a comparatively short "set song", in general form not unsuggestive of the warble of the Cassin Purple Finch. One song, recorded "from life", ran *pree-pr-pr, pr-pr-pree!* This is perhaps shorter than the usual song, yet not much so, I think. One bird ended its song always with a brave *pree-veur!* in perfect imitation of the Olive-sided Flycatcher, this note standing forth when the rest of the song was damped out by distance. I do not know whether this appropriation of the Olive-sided Flycatcher's call was peculiar to this one individual Pine Grosbeak or whether others do the same thing. Finally, the pitch of the Black-headed's song is comparatively low, with a preponderance of mellow "eu" sounds and others from the same general region. The pitch of the Pine's is comparatively high, and is characterized throughout with long-*e* and short-*i* tonals, perpetuating themselves forcibly as if made to go with great pressure through a musically vibrating small orifice.

Museum of Vertebrate Zoology, Berkeley, California, September 8, 1921.

FROM FIELD AND STUDY

The Speed of a Flying Dove.—The automobile has, ere this, been the means of determining the approximate speed of birds (see *CONDOR*, xxii, p. 186), and once again it comes into play for the same purpose.

The Western Mourning Dove (*Zenaidura macroura marginella*) is considered a fast-flying bird by sportsmen, and it has been said to attain the speed of sixty or seventy miles an hour. This has always seemed an extravagant speculation to me and I firmly believe it so now. That the bird is a difficult wing-shot is due to its erratic flight and small size (feathers not counted) more than to its speed.

This was fairly demonstrated when, on July 28, 1921, I rounded a curve on the boulevard between San Jose and Oakland and almost ran onto a dove. The sudden appearance of the car and noise of the motor frightened the bird so that it crouched for a moment and did not flush until I was almost on top of it. At the moment it flew I slowed down a bit, but the bird was evidently frightened and confused for when it started off to the right, the approaching machine drove it back straight ahead, and an attempt to break to the left resulted likewise. The bird then settled down to the

business of getting away straight ahead. It was flying about twenty-five feet over the road-bed and appeared plainly to be exerting all its energy. During this very short time the bird had gotten about thirty or forty feet ahead of me when I commenced crowding it.

Accelerating my speed until I attained thirty-five miles an hour, I saw I was gaining perceptibly on the bird, and maintained that speed. The dove was evidently resigned to its fate, for it flew straight over the road-bed for about a quarter of a mile, when I came almost under it, and with a violent left-wing stroke it shot off to the right and over the fields. At this instant I was endeavoring to regulate my speed to correspond with that of the bird, but its sudden side-step frustrated this. It is, however, safe to conclude that the dove's flight was in the neighborhood of thirty miles an hour. Certainly it was considerably less than thirty-five miles an hour, and there was no wind to hinder or assist its progress. Moreover its actions were totally unlike those of most doves under similar circumstances. They seldom crouch before flushing, and they usually fly to the right or the left, exhibiting no trace of confusion.

One element of error in the conclusion that the greatest speed of doves is thirty miles an hour remains, namely, that this bird may have been a grown juvenile with as yet undeveloped powers of flight; but it did not appear so to me.—FRANK N. BASSETT, Alameda, California, August 16, 1921.

The Intrepid Pewee.—During the week, August 15 to 21, 1921, we were in one of the Fallen Leaf Lodge cottages on the edge of Fallen Leaf Lake, Eldorado County, California. The whole country in that section of the state is generally well wooded. Our cottage was in the midst of fairly large forest trees, consisting of white fir, incense cedar and Jeffrey pine. One of the commonest birds about Fallen Leaf Lake is the Western Wood Pewee (*Myiochanes richardsoni richardsoni*), and one bird of this species had the habit of perching at the very top of a small incense cedar, about twenty-five to thirty feet from the ground, and darting off to catch flying insects, often making a single audible snap during the flight, apparently made with the bill at the instant of taking its prey.

This bird made many spirited attacks upon Blue-fronted Jays (*Cyanocitta stelleri frontalis*). The attacks usually consisted of a series of stoops from some distance and my attention was always drawn to the performance by hearing the snapping noise made by the Pewee, which sounded the same as the noise made in seizing an insect, but repeated rapidly during the attacks. It would not be safe to say that the noise was not made with the wings, but I think that it was not; yet I have a doubt on this point, which I was not able to clear up. Several times the Pewee was seen following flying Jays, but it was not clear whether the Jay was fleeing or the Pewee merely following. In these attacks the Pewee displayed the utmost dexterity, passing through the crowns of the trees without any perceptible loss of speed and dashing directly at, or very close to, the enemy. Its swiftness and accuracy of flight were not less admirable than its intrepid spirit.

The reaction of the Jays to these attacks was to move off as if annoyed or disturbed rather than alarmed, but in some instances the Jays moved off fast enough to give the impression of rapid retreat. The attacks always persisted until the Jay or Jays attacked had left. Once I witnessed an attack upon two Jays and again upon three, neither the size nor the number of enemies seeming to deter the truculence of the diminutive aggressor. This Pewee was under observation for short periods every day for a week and nothing about its behavior indicated that it had a nest or young to protect, and it seemed evident that the attacks on the Jays were entirely offensive.—CLAUDE GIGNOUX, Berkeley, California, September 17, 1921.

Birds and Oil in Oklahoma.—Floating oil on the Pacific is not the only trap which birds must avoid if they would live; for in Kansas, Oklahoma and Texas the same sorts of traps exist and annually destroy a considerable quantity of bird-life.

In an oil field there is an inevitable waste of oil. This waste is caused by wild wells, leakage in tanks and pipe lines, cleaning out of old wells, tanks and lines, and simple abandonment of non-merchantable oil. All of this waste collects in artificial ponds which lie along natural drainage courses and after a few weeks standing becomes thick and gummy through the evaporation of the lighter constituents. From the air

these ponds appear as blue as ponds of water and they undoubtedly attract water fowl.

The smaller sandpipers, when migrating, fall prey to these traps in larger numbers than all other birds collectively. This is probably due to their habit of wading along the shallow margins of ponds in search of their food. I have seen ducks descend as if to alight in oil ponds, but they never do; they must be warned in time by odor or some non-attractive appearance the pond may have. The larger waders get their feet oiled up but not the plumage.

There is no remedy for this condition and the wild life will have to suffer its continuance as it does telegraph wires, light houses and the like.—J. R. PEMBERTON, *Tulsa, Oklahoma, August 21, 1921.*

Least Tern Feeding Young on September 25.—All during the early part of September, 1921, Least Terns (*Sterna antillarum*) were still feeding young at Carpinteria, Santa Barbara County, California. On September 25, one adult was still feeding a single young bird. The adult brought small fish at intervals of about twenty minutes to a flat in a lagoon where the young bird waited. At the approach of the parent the young bird uttered the characteristic *kit-tick*, opened its mouth and spread its wings. After feeding the young bird, the parent always dipped its bill two or three times in the lagoon as it flew off. Once the parent alighted in the lagoon and bathed. The young bird joined it, and both floated and splashed a moment or two.—RALPH HOFFMANN, *Carpinteria, California, September 25, 1921.*

On the Occurrence of the Buffle-head at Eagle Lake.—The article by Mr. Dixon in the last CONDOR was read with particular interest because of the fact that we had

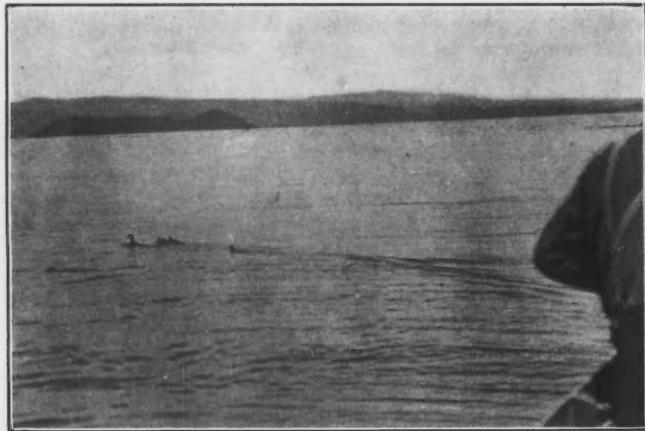


Fig. 32. IN PURSUIT OF THE BUFFLE-HEAD, WITH YOUNG, ON EAGLE LAKE, CALIFORNIA, MAY 27, 1921.

noted a pair of these ducks with young on the lake prior to Mr. Dixon's visit. Our party, consisting of Messrs. Jules Labarthe, Sr. and Jr., and the writer, after an extended collecting trip in northern California and southern Oregon, on our way south, encamped at the lake for a few days. May 27 (1921) was spent on a trip to the islands along the east shore of Eagle Lake. Here we found Farallon Cormorants with everything from newly built nests to those with half-grown young. The California Gulls, however, were

just beginning to lay, while in the great rookery of American White Pelicans we were surprised to find that every set of eggs (and there were scores) had been destroyed by some undetermined agency.

While rowing along the island shore we came upon a female *Charitonetta albeola* with eight small young. We realized the species had not hitherto been recorded from the state as a breeding bird, and knowing, too, that all records are best when backed by proof we started in immediate and, I fear, rather noisy pursuit in an endeavor to secure photographs. The best of these are shown herewith. In the excitement of the chase two of the juveniles became separated from the brood and some time later were discovered close to the island shore. Here, tireless efforts on the part of Jules, Jr. (for the speed with which they could swim and dive was a revelation) resulted in their capture and in their later posing, unwillingly, before the grafex.

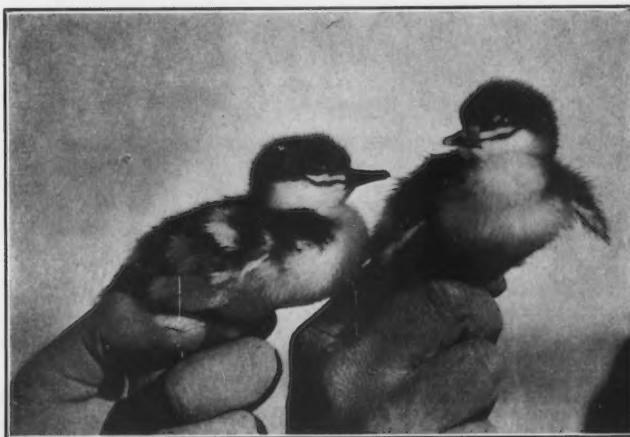


Fig. 33. YOUNG BUFFLE-HEAD DUCKS, CAPTURED BY JULES LABARTHE, JR., AT EAGLE LAKE, MAY 27, 1921.

Photo by Jules Labarthe, Sr.

Eventually the ducklings were released and with seeming joy and great speed they paddled to their parents (for the strikingly marked male, too, had now made his appearance); and in a small lake of the island (or neck of mainland, we never determined which) they then all cruised around contentedly after their most spirited adventure.

Later a storm arose on the lake, and the high waves rapidly filling our boat on the journey homeward we were forced to return to the isle. Here we were marooned, provisionless, for the rest of the day. Late in the evening we rowed back to our camp against a rough sea in pitchy darkness, an experience that was all too thrilling for pleasure.—MILTON S. RAY, *San Francisco, California, October 6, 1921.*

The Sabine Gull in Southern California.—I wish to report two Sabine Gulls (*Xema sabini*) seen at Anaheim Landing, August 30, 1921. Three members of the Los Angeles Audubon Society, Mesdames C. H. Hall, A. J. Mix and F. T. Bicknell, at 11 a. m. saw what at a distance resembled a Bonaparte Gull on account of its dark head. The bird was alone and constantly preening its feathers. Moving forward quietly, the observers approached within thirty feet or less and studied the bird at leisure with binoculars for at least twenty minutes. They followed it slowly along the water's edge, trying several times, without frightening it, to put it to flight; but with a flight of a few feet, it would settle on the beach again. It seemed tired as from a long flight.

The slate hood bordered at base with black, the dark gray mantle and black outer wing quills, with inner webs and tips white, were unmistakable; and its slightly forked tail, black feet and black bill tipped with yellow, were easily noted and identified the bird as still in summer plumage.

At 2 p. m. the same day, farther down the coast, between Anaheim Landing and Seal Beach, a second Sabine Gull was studied; it was in the winter plumage, only a remnant of the dusky hood on back of head and slaty ear coverts remaining. It, too, seemed worn with long flight, allowing the Audubonites to approach within fifty feet, where a good study was made. A Western Gull was patrolling the beach in lordly style and ordered the Sabine to "move on", emphasizing the command with ruffled plumage and open bill attacks. Neither of the Sabines were feeding.

This report was telephoned to Mr. L. E. Wyman, Ornithologist of the Los Angeles Museum, the same evening before any books were consulted and his questions were answered from notes made of the birds as studied first-hand in the field. He did not question the identification.—Mrs. F. T. BICKNELL, *Los Angeles, California, September 1, 1921.*

The Gray Vireo in Los Angeles County, California.—On May 31, 1921, I discovered a Gray Vireo (*Vireo vicinior*) in Mint Canyon, twelve miles from Saugus, California. So far as I am able to learn, this species has not previously been recorded west of the Cajon Pass region, which is some fifty miles east of Saugus. The bird was not taken, but it was studied for three hours under favorable conditions. Only the one bird was seen, presumably the male, as it was in full song. It had established a station in the chamisal among typical "gray vireo conditions". From this station it was driven again and again only to return to the same point each time. Prolonged search failed to reveal the nest although it seemed certain that one must be located within a short distance. Identification was based upon song, the ashy gray color, and persistence in plant association all made more or less familiar through previous acquaintance in Arizona and in the Cajon Pass country.—LOYE MILLER, *Southern Branch, University of California, Los Angeles, September 19, 1921.*

Eclipse Plumage of Cinnamon Teal.—On July 11, 1921, A. W. Anthony, H. C. Cleaves and I explored Cuyamaca Reservoir, a lake in the Cuyamaca Mountains, San Diego county, for material for a habitat group of grebes for the Natural History Museum of San Diego. A year previously I had found grebes breeding abundantly in the tule patches covering several acres at the east end of the lake. Last winter's rains were scanty here and the steady draft on the water of the reservoir had lowered the water so much that the tule patches were high and dry and the grebes had gone elsewhere, though we did see a brood or two, too large for our purpose.

Several broods of young ducks were present and I saw a group of three Cinnamon Teal (*Querquedula cyanoptera*) that I thought were nearly grown and shot two of them. These proved to be adults in a stage of plumage new to me. On skinning them I found both to be males. They are in the "eclipse" plumage which is undescribed in any publication accessible to me here. Probably individuals will vary somewhat, as is the case with these two birds. No. 7455 may be described as follows:

Similar to the usual female plumage; crown and nape dark brown; sides of head, throat and neck a pepper-and-salt mixture of dull cinnamon and light gray speckled with blackish; back and rump as in the spring plumage except that the mottling is coarser and the light edgings to the feathers narrower; the wings and tail are not yet molted and perhaps would not show any changes; plumage of breast and lower surface similar to that of the female and immature male, the feathers being brown centrally, with lighter edgings; this edging is dull pale cinnamon on the breast, passing to light gray and dull white on the belly. There are a few small patches of the old cinnamon plumage on the sides. The lower surface of the other bird is still nearly half cinnamon colored. It had yellowish brown irises, while those of no. 7455 were red.—FRANK STEPHENS, *San Diego, California, August 17, 1921.*

Concerning Incubation on the Part of the Male Belted Kingfisher.*—In the volume entitled "Michigan Bird Life", by Professor Walter Barrows, published in 1912 by the Department of Zoology and Physiology of the Michigan Agricultural College, under the head of Kingfisher (*Ceryle alcyon*), on page 343, the statement is made that "The female alone incubates, but the male carries food to her at frequent intervals." This may have been taken from Bendire's "Life Histories of North American Birds", in which

*Contribution from the Museum of the California Academy of Sciences.

the latter author says, page 38, "The male does not assist in incubation, but supplies its mate with food while so engaged, and she rarely leaves the nest after the first egg has been laid; at any rate I have invariably found the bird at home if there were any eggs in the nest". Major Bendire is referred to in the sentence just previous to the one first quoted above.

For more light on this subject I have recently looked up far too many authorities to mention in this brief article, but the only other reference to the matter of the incubating habits of this species that I have so far found is in Nuttal's "Manual of the Ornithology of the United States and Canada", 2nd edition, page 720, where it says "incubation, in which both parents engage, continues for 16 days". So here are two well known ornithologists responsible for absolutely contradictory statements! The matter is "side-stepped" by every other authority that I have consulted.

Now it happened on June 24, 1921, that Dr. G. Dallas Hanna, of the California Academy of Sciences, my brother, John W. Mailliard, and I were lunching at noon time in the bed of Nicasio Creek, Marin County, California, at the base of Black Mountain, and while so occupied noticed a Belted Kingfisher fly into a hole in the opposite bank. Soon after finishing lunch we proceeded to investigate this matter and discovered a nest containing five eggs, about one-third incubated, with the male bird in the tunnel and apparently on the nest. This tunnel was about ten feet long and only twelve or fourteen inches below the surface of the ground, which was rather sandy and friable, and the cavity was easily pried open by means of an old fence picket.

The bird did not attempt to leave until the nest was almost reached in the upheaving process. As it flew off it was secured for evidence and proved to be the male, with the abdominal region partially bare, as if from sitting on the eggs.

Earlier in the day two kingfishers had been observed flying up and down the creek, and shortly before lunch a female had been taken as it perched for a moment on a snag about seventy-five yards below the nest, which we had not at that time discovered. This female was apparently the other owner, yet showed practically no sign of having been incubating, as the plumage upon the abdomen was in a good state of preservation.

While this matter is not one of great importance it is one of some interest and, as part of the life history of a well known bird, might as well be cleared up if possible, hence this short paper is written in the hope that some other observer, who may have had better opportunities to study the question, may come forward with sufficient evidence to prove the point one way or the other.—JOSEPH MAILLIARD, San Francisco, California, August 10, 1921.

Eastern Kingbird at Mono Lake.—On July 19, 1921, I saw an Eastern Kingbird (*Tyrannus tyrannus*) near Mono Lake, Mono County, California. In Grinnell's Distributional List (1915), there are only two records for the bird from California.—RALPH HOFFMANN, Carpenteria, California, September 25, 1921.

Chronicle of Additions and Eliminations Pertaining to the California State List of Birds.—The present note carries the chronicle of the birds of California forward from Pacific Coast Avifauna no. 11 (1915) and from my supplementary note in THE CONDOR of January, 1919 (vol. xxi, pp. 41-42) to October 15, 1921. I have followed the rule of letting all definite proposals "ride", as if the findings set forth were final in every respect, unless and until someone has brought forward good reasons for doubting the conclusions involved. No attention is here paid to mere changes in names; only the addition or subtraction of "concepts" of species or subspecies is considered.

ADDITIONS

1. *Larus occidentalis livens* Dwight. Dark-mantled Western Gull. (See Dwight, Proc. Biol. Soc. Wash., vol. 32, February 14, 1919, p. 11.)
2. *Phaethon aethereus* Linnaeus. Red-billed Tropic Bird. (See Law, Condor, xxi, March, 1919, p. 88.)
3. *Chen caerulescens* (Linnaeus). Blue Goose. (See Grinnell, Condor, xxii, March, 1920, p. 76.)
4. *Polyborus cheriway* (Jacquin). Audubon Caracara. (See Heath, Condor, xxii, March, 1919, p. 125.)
5. *Otus asio macfarlanei* (Brewster). MacFarlane Screech Owl. (See Grinnell, Condor, xxi, July, 1919, p. 173.)

6. *Bubo virginianus occidentalis* Stone. Rocky Mountain Horned Owl. (See Swarth, Condor, xxiii, July, 1921, p. 136.)
7. *Otocoris alpestris sierrae* Oberholser. Sierra Horned Lark. (See Oberholser, Condor, xxii, January, 1920, p. 34.)
8. *Euphagus cyanocephalus minusculus* Grinnell. California Brewer Blackbird. (See Grinnell, Condor, xxii, July, 1920, p. 153.)
9. *Passerulus sandwichensis brooksi* Bishop. Dwarf Savannah Sparrow. (See Bishop, Condor, xvii, September, 1915, p. 187, and Mailliard, Condor, xxiii, September, 1921, p. 164.)
10. *Passerella iliaca fulva* Swarth. Warner Mountains Fox Sparrow. (See Swarth, Proc. Biol. Soc. Wash., vol. 31, December 30, 1918, p. 162.)
11. *Passerella iliaca canescens* Swarth. White Mountains Fox Sparrow. (See Swarth, Proc. Biol. Soc. Wash., vol. 31, December 30, 1918, p. 163.)
12. *Passerella iliaca mariposae* Swarth. Yosemite Fox Sparrow. (See Swarth, Proc. Biol. Soc. Wash., vol. 31, December 30, 1918, p. 161.)
13. *Piranga rubra rubra* (Linnaeus). Summer Tanager. (See Miller, Condor, xxi, May, 1919, p. 129; *idem*, xxii, March, 1920, p. 78.)
14. *Petrochelidon albifrons hypopota* Oberholser. Northwestern Cliff Swallow. (See Oberholser, Canadian Field-Naturalist, xxxiii, November, 1919, p. 95.)
15. *Toxostoma curvirostre palmeri* (Coues). Palmer Thrasher. (See Huey, Condor, xxii, March, 1920, p. 73.)

ELIMINATIONS

1. *Numenius americanus occidentalis* Woodhouse. Lesser Long-billed Curlew. [Leaving simply *Numenius americanus* as the species, Long-billed Curlew.] (See Grinnell, Condor, xxiii, January, 1921, p. 21.)
2. *Toxostoma redivivum pasadenense* (Grinnell). Pasadena Thrasher. [Leaving *Toxostoma redivivum redivivum* as the California Thrasher throughout the coastal and west-Sierran parts of the state south of the San Francisco Bay region.] (See Oberholser, Auk, xxxv, January, 1918, p. 52, and Grinnell, Condor, xxiii, September, 1921, p. 165.)
3. *Heleodytes brunneicapillus bryanti* Anthony. Bryant Cactus Wren. (See Grinnell, Condor, xxiii, September, 1921, p. 169.)

With the 15 additions and the 3 eliminations specified above, the net increment is 12; this number added to the total of 564 (in January, 1919) makes a present state list of 576 species and subspecies.—J. GRINNELL, Museum of Vertebrate Zoology, Berkeley, California, October 15, 1921.

Bird Banding.—The writer recently suggested to the Editor that a definite place in THE CONDOR, the same position in each issue, be assigned to the publication of records of birds banded in the western states. Stimulation of the movement should result, and one actively engaged in banding or in taking specimens would have a reference list instantly at hand when he captured a bird banded by another. The plan was accepted on condition that the writer "function as furnisher" of copy for such column, and place for recording such data has been assigned to the last page of "From Field and Study" department.

Will those who are banding, or who have banded, birds, or who have taken banded birds alive or dead, please send to the appended address full data with regard to same, in order that it may be published without delay? The United States Biological Survey, Washington, D. C., will furnish bands and full information with regard to their use to any one who is interested. Report through CONDOR columns will not in any way replace, of course, the rendering of reports to the Biological Survey, or prevent the further use of the data by those who furnish it, but will merely constitute a local "clearing house" for such data.

Mr. S. Prentiss Baldwin has demonstrated (see various articles in the Auk and elsewhere) the value of data thus obtained, even by one working alone. Naturally the results can be greatly multiplied by the coöperation of those at many points, particularly in our western states, where migration routes and local distribution are doubtless affected by topographical features.—J. EUGENE LAW, 333 S. Van Ness Ave., Los Angeles, California, October 3, 1921.

RECORD OF BIRDS BANDED

(Bands: 28811-28819, 48101-48119, 52201-52230, 56421, 56426.)

J. E. Law, at Berkeley, Calif., February 22 to March 25, 1921:
Zonotrichia coronata, (3) 52206, 10, 11. *Pipilo c. crissalis*, (4) 52201, 02, 08,
Junco oreganus (subsp.), (12), 48101-
48112. *Pipilo m. falcifer*, (2) 52203, 05.
Passerella i. fuliginosa, (2) 52207, 09. *Ixoreus naevius* (subsp.), (1) 56421.
Passerella i. sinuosa, (1) 52204.
At Bluff Lake, San Bernardino Mts., Calif., August 21 to 30, 1921:
Junco o. thurberi, (9) 48113-48119, 52212,-
13. *Oreospiza chlorura*, (25) 28811-28819,
52214-52218, 52220-52230.
Passerella i. stephensi, (1) 52219.

EDITORIAL NOTES AND NEWS

It seems curious, when one comes to think of it, how prevalent has become the notion among amateur observers of birds that the field-glass is an indispensable part of their equipment. There is, to be sure, no question but that the field-glass is very helpful to many individual observers, and that for purposes of patient and *detailed* study of the behavior of birds in the wild it is truly essential to the few persons who engage in such close studies. But the claim that the field-glass is at all "necessary" to the average run of field observers is, we believe, unjustified. We even aver that addiction to the use of the instrument in question is a hindrance rather than a help in the enjoyment of birds out-of-doors, as well as in the gathering of many of the facts of scientific value concerning them. Our point is that birds out-of-doors are things that in better degree than most other living beings can be seen and watched with the unaided human eye. And what humans need right now is to exercise their senses of sight and hearing in normal fashion—to get away from all those artificialities which go to make up the oppressing burden of "civilization". Bird study afield should take its place as a wholly *natural* recreation, because the nervous and muscular activities which it brings into play are of primitive sorts. Their exercise will tend to restore the proper balance of mind and body, in just so far as they are used in a perfectly normal way. The use of glasses, save in cases of injury or disease on the part of the observer, detracts from the full measure of benefit to be derived. As regards the element of sport in identifying species, there is surely far more "good fun" in naming the birds without the use of any artificial device. Furthermore, the person who is dependent only on his naked eye can make a bigger census both of individuals and species. At least, the most accurate and at the same time rapid bird-counter we know personally,

uses no glasses. And as for gathering facts in regard to behavior of birds, dependence upon glasses means cutting out a lot of the horizon, failure of appreciation of goings at large while focussed upon details. We have been impressed with the number of things our opera-glass companion did *not* see, at least as much as with the number of things he said he saw that we without glasses had failed to see!

Attention is directed to Mr. Law's note upon bird banding on page 196 of this issue. Here is a method of bird study that should appeal to those who wish to contribute observations of value, yet without killing birds. The possibilities of such work have already been well demonstrated by Mr. S. Prentiss Baldwin (see his *Bird Banding by Means of Systematic Trapping*, *Proceedings Linnaean Society of New York*, December, 1919; *Recent Returns from Trapping and Banding Birds*, *Auk*, April, 1921, pp. 228-237; *The Marriage Relations of the House Wren*, *idem*, pp. 237-244). The United States Biological Survey stands ready to coöperate with anyone taking up the work, and *The Condor*, through Mr. Law, will supply space in its columns for the record of birds as banded locally and of banded birds later recorded.

In building their new home, at Jennings Lake, near Portland, Oregon, Mr. and Mrs. William L. Finley have provided a concrete vault for the safe housing of films and records. Their collections now contain close to 200,000 feet of movie negative of birds and mammals, as well as some 10,000 still-life negatives. Last spring and early summer were spent in southern California where some good pictures were secured.

A most deplorable piece of bad luck happened to Mr. Allan Brooks the past summer, of which we only recently heard in a

roundabout manner. Fire broke out in his workshop at Okanagan Landing, British Columbia, and destroyed a part of his ornithological collections including some 2000 skins gathered in his boyhood years. Mr. Brooks's hands were pretty badly burned, but their recovery has been rapid and practically complete, so that his capacity for drawing is in no degree lessened, as might have been feared.

The index to the current volume of *THE CONDOR* appearing in this issue was prepared by Mr. J. R. Pemberton in his usual painstaking manner. To him we extend our best thanks.

The National Academy of Sciences, Washington, D. C., has issued as its First Memoir, Volume XVI, a brochure entitled "Lower California and Its Natural Resources"; author, Edward W. Nelson, Chief, Bureau of Biological Survey. The contribution is of quarto size and comprises 112 pages and 35 plates. Our copy was received July 5, 1921. Rarely have we read a more fascinating work, for it was written by a true naturalist, based upon personal field experience, and is a straightforward, informative account. In 1905 and 1906 Dr. Nelson accompanied by Mr. E. A. Goldman traversed the entire peninsula of Lower California, their route being shown on an excellent map constituting one of the plates in the report under review. Topography, climate, plant life, animal life, faunal districts, life zones, history of explorations, and agricultural features are among the topics dealt with. The splendid photographic reproductions supplement the text. Lists of the birds, mammals, reptiles and amphibians are given for the different areas. And there is a colored map of the life zones. The paper terminates with a very full bibliography of titles relating in general to Lower California, and to its vertebrate zoology in particular. Because of the immediate contiguity of the territory covered by Dr. Nelson's monograph, ornithologists in the southwestern United States will want to acquaint themselves promptly with this notable contribution.

The death of Judge Edward Wall occurred at San Bernardino, California, September 23, 1921. He was born in the same city, June 29, 1873. "Ed" Wall, as he was familiarly known, was one of the early members of the Cooper Ornithological Club, back in the 90's, though his membership subsequently lapsed for a time. In those early years he was one of the "collecting fraternity" which thrived in the neighborhood of Riverside, Redlands and San Bernardino, and from whose ranks came several men of

recent scientific eminence. Ed Wall, however, specialized in journalism and in the law, in which fields he won marked recognition. For the past six years or so, Judge Wall's early inclinations toward bird study were reasserting themselves, as attested by reaffiliation with the Club (in 1913) and by articles which have appeared under his authorship in *THE CONDOR*.

Mr. C. de Blois Green spent some weeks during the past summer upon Porcher Island, near Prince Rupert, British Columbia, in search mainly of eggs of the Marbled Murrelet. He was successful in learning hitherto unknown facts regarding the breeding of this elusive though common bird, the eggs of which have not yet, to our knowledge, been taken.

Part XII (vol. II, pp. 257-352, pl. 6) of Witherby's "Practical Handbook of British Birds" was published on October 5, 1921. In all respects, the issuance of this work begun some three years ago is proceeding according to announcement (see *Condor*, XXI, 1919, p. 174). Six more parts are in prospect. The present installment includes most of the ducks, and from the American standpoint is of special interest as affording detailed description of the eclipse plumage in many of our own species and as discussing the status of American and Old World races where such occur. For example, the American Pintail is commented upon under the accepted name *Anas acuta tzitzioha*.

Mr. R. H. Palmer, formerly of Pocatello, Idaho, and more recently of the University of Washington, Seattle, has gone to the City of Mexico, where he has received a commission to carry on geological work for the Mexican Government. He plans to embrace the opportunity of doing some ornithological collecting as well.

PUBLICATIONS REVIEWED

FIRST INSTALLMENTS OF DAWSON'S BIRDS OF CALIFORNIA.—The first two "parts" of "The Birds of California", by William Leon Dawson, reached our office on February 23 and March 16, respectively. Each part comprises 64 pages of main text, the two together being paged continuously from 1 to 128, inclusive. There is naturally as yet no title page to be cited; the covers with their announcements are to be considered merely temporary—in the nature of publisher's advertising, as is the customary thing in similar cases.

In addition to numerous half-tone illus-

trations (unnumbered) in the text, there are several full-page inserted plates, unnumbered. We have seen copies of two editions, the "Booklovers'" and the "Presentation" ("Format de Luxe"). These are identical as to printed matter save that in the first named edition, the two parts contain three colored plates and one photographic plate while in the "de Luxe" they include nine colored and four photographic plates.

The outstanding features of Dawson's work, as indicated by these initial offerings, are the extraordinary abundance and excellence of the illustrations, and the vigorous literary style characterizing the text. Words fail us to express adequately our admiration of practically every one of the large number of photographic studies, either from the artistic or the natural history standpoint; usually it is from both standpoints. The best we can do is to refer to a few of the pictures which happen to have afforded us particular pleasure in their contemplation.

The full-page photograph by the author (p. 106) captioned "A Tempest of Black-birds" affords endless material for study of flight attitudes of Red-wings. The Brewer Blackbirds foraging and bathing with perfect obliviousness "in the estero" (p. 87) and also those on the telephone wires (p. 85), with suggestive caption "High Notes", call to mind these exact scenes from one's own experience. Dawson's photograph of "A Flight of Western Crows" in Santa Barbara County (p. 17) and that of "Ravens at Play" in Los Angeles County (p. 8) are both, to our mind, of exceptional merit.

Perhaps the rarest bird photograph ever secured is that of a California Jay in the act of taking an egg out of a Black-headed Grosbeak's nest. An excellently executed photogravure plate is assigned to this study. Donald R. Dickey was the lucky photographer; we wish we could be told the "story" as to just how he obtained this picture.

Then there are the fine colored plates, from water-color drawings by Allan Brooks. (There are some text illustrations from black-and-white drawings by the same artist, as well.) It is difficult to say which of these plates is best. Possibly the Scott Oriole plate takes first place; but all are in every respect on a very high plane.

As to general plan of treatment for each species, "The Birds of California" follows closely that employed in Dawson's "Birds of Washington". A series of small-type paragraphs contains information of a popularly less assimilable kind, and this is followed by the running, "readable" account of the

species. Page 1 begins at the other end of the list as regards phylogenetic sequence of species, namely with the Raven instead of a Grebe; and of this departure from the usual custom, especially in a popular work, we heartily approve. The full species covered in the two parts at hand number just twenty, representing the Corvidae and most of the Icteridae.

The accounts of species vary considerably in merit; some, for instance that of the Tricolored Blackbird, approach exhaustiveness; others, for example that of the Steller Jay, fall far short of being a full treatment. We would not have ventured this criticism if it weren't for the claim of scientific and popular completeness set forth on the cover—which inscription we hope will be left off from the permanent title page. All bird students together can hardly be said to possess a "complete" knowledge of even our best-known birds. And several of the accounts in "The Birds of California" are only fragmentary as compared with the total of information already published in regard to the species concerned.

As previously intimated, Dawson's literary style is vigorous. There is an abundance of allusion and of figures of speech, as a rule hitting off most aptly the peculiarities of behavior and temperament of the bird dealt with. We think that the author is about at his best in his account of the California Jay. Particular phrases or modes of expression, which must be read with the context to be appreciated, portray the bird with thrilling vividness. Personal reaction to the Dawsonian style will of course vary infinitely; but as far as our acquaintance extends, we know of no one who has not enthused over the majority of the text accounts in "The Birds of California". We will confess that now and then an extreme expression has struck us as unfortunate. One account, that of the Cowbird, is rather full of extravagant language; and also, humanistic terms are employed to a degree that makes it to us displeasing. The fact that the Cowbird constitutes a very interesting type of bird, biologically, is scarcely to be detected amid the mass of maledictorous verbiage.

Here and there the philosophically inclined reader will find suggestions or bits of theorizing that are pleasingly stimulative. The author's ideas with regard to the phylogeny of the Yellow-billed Magpie constitute a case in point; and another is comprised in the population-estimates of the California Jay. Dawson has very positive beliefs as to the baneful relationships of

the jays to other birds. His figures as to the destruction of birds' eggs by jays are interesting but in all likelihood excessive.

Taken as a whole, these first fascicles of Dawson's "Birds of California" are quite acceptable, more especially from the standpoint of the esthetic enjoyment of bird study. The typography and make-up are neat, and satisfactorily free from error. We hope that the undertaking will come to completion without further delay, and with the same plane of merit sustained to the end.—J. GRINNELL.

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

AUGUST (meeting for July).—Regular monthly meeting of Southern Division Cooper Ornithological Club was held at the Los Angeles Museum at 8:00 p. m., August 2, 1921. In the absence of both presiding officers, Mr. G. Frean Morcom was acclaimed chairman. Other members present were: Messrs. Chambers, de Groot, Hanaford, Howell, King, Lamb, Law, Robertson, Trenor, Wheeler and Wyman; Mrs. Law and Miss Germain. Mrs. Wheeler and Mr. Enochs were visitors.

Minutes of the July meeting were read and approved. New applications for membership were presented as follows: Miss Marie Pauline Coppee, Ross, Marin County, by Miss Miller; Rex P. Enochs, 715 So. Hope St., Los Angeles, by L. E. Wyman; Walter Mackay Case, Box 399, Prescott, Ariz., and Joseph Edward Hallinen, Cooperton, Kiowa County, Okla., by W. Lee Chambers; Mary Caroline Coman, 1644 Berkeley Ave., Stockton, by Tracy I. Storer; Mrs. Wm. Clark Brown, 945 Orange St., Los Angeles, by H. C. Bryant. The names of Robert Cunningham Miller and Wm. Polk Farber, of Berkeley; and Mrs. Mildred Tiffany Wood, Hopland, were received from the Northern Division.

Formal business ended, members who had recently been a-field related some interesting experiences and observations. Adjourned.—L. E. WYMAN, Secretary.

AUGUST.—Regular monthly meeting of the Cooper Ornithological Club, Southern Division, was held at the Los Angeles Museum at 8:00 p. m., August 25, 1921. In the absence of both presiding officers, Dr. L. H. Miller was acclaimed chairman of the meeting. Other members present were: Messrs. Chambers, Edwards, Warmer, Wheeler and Wyman; Mesdames Brown and Warmer; Misses Beers and Pratt. Mrs. Beers, Mrs. Wheeler, Alden Miller and Mr. Patterson were visitors.

Minutes of the July meeting were read and approved, and those of the Northern Division for July were read. Names presented for membership were: Miss Coral Canby, San Fernando, by R. C. Ross; John Jonas, 215 West Park St., Livingston, Mont., by E. R. Warren; Otis Howard Wade, 1353 Vine St., Los Angeles, by W. Lee Chambers.

The Secretary announced that the missing parts of *The Auk*, needed to complete the set belonging to the Southern Division, had been donated by members. An invitation from Dr. Miller to the Club to hold its September meeting at his home, on the Arroyo Seco, was unanimously accepted.

Formal business completed, members who had recently returned from their summer outings contributed to a half hour of informal bird talk. Adjourned.—L. E. WYMAN, Secretary.

SEPTEMBER.—The regular monthly meeting of the Cooper Ornithological Club, Southern Division, was held at 3:00 p. m., September 25, 1921, at the home of Dr. L. H. Miller, on the Arroyo Seco, Los Angeles. In the continued absence of both presiding officers, Dr. Miller was appropriately called to the chair. As testifying to the popularity of the occasion, about sixty members and friends attended.

Since the meeting was more than ordinarily of a social nature, formal business was limited to reading of minutes of the August meeting, and presentation of three new names, as follows: Mrs. Josephine Jackson Bates, 1267 Sunset Ave., Pasadena, and Miss Jessica A. Potter, 1118 Santee St., Los Angeles, by Miss Mary Mann Miller; and Mrs. Adelalde R. Bartlett, Assessor's Office, City Hall, San Francisco, by W. Lee Chambers.

Numerous members then contributed their most interesting recent observations, among them a record of the Sabine Gull near Los Angeles, by Mrs. Bicknell; mating antics of juvenile Anna Hummers, by Miss Miller; and feeding habits of the Black Phoebe, by Mrs. Terry. Mr. Law then spoke of the entertainment and knowledge derived from bird-banding, giving results of some recent work in this line, and exhibiting the traps used for the purpose. Dr. Warmer stated that homing pigeons used during the Great War were now on exhibition at Arcadia Balloon Station, near this city.

On motion by Laurence Peyton the meeting adjourned to the informality of a water melon feast, without which this annual event would be incomplete. Adjourned.—L. E. WYMAN, Secretary.

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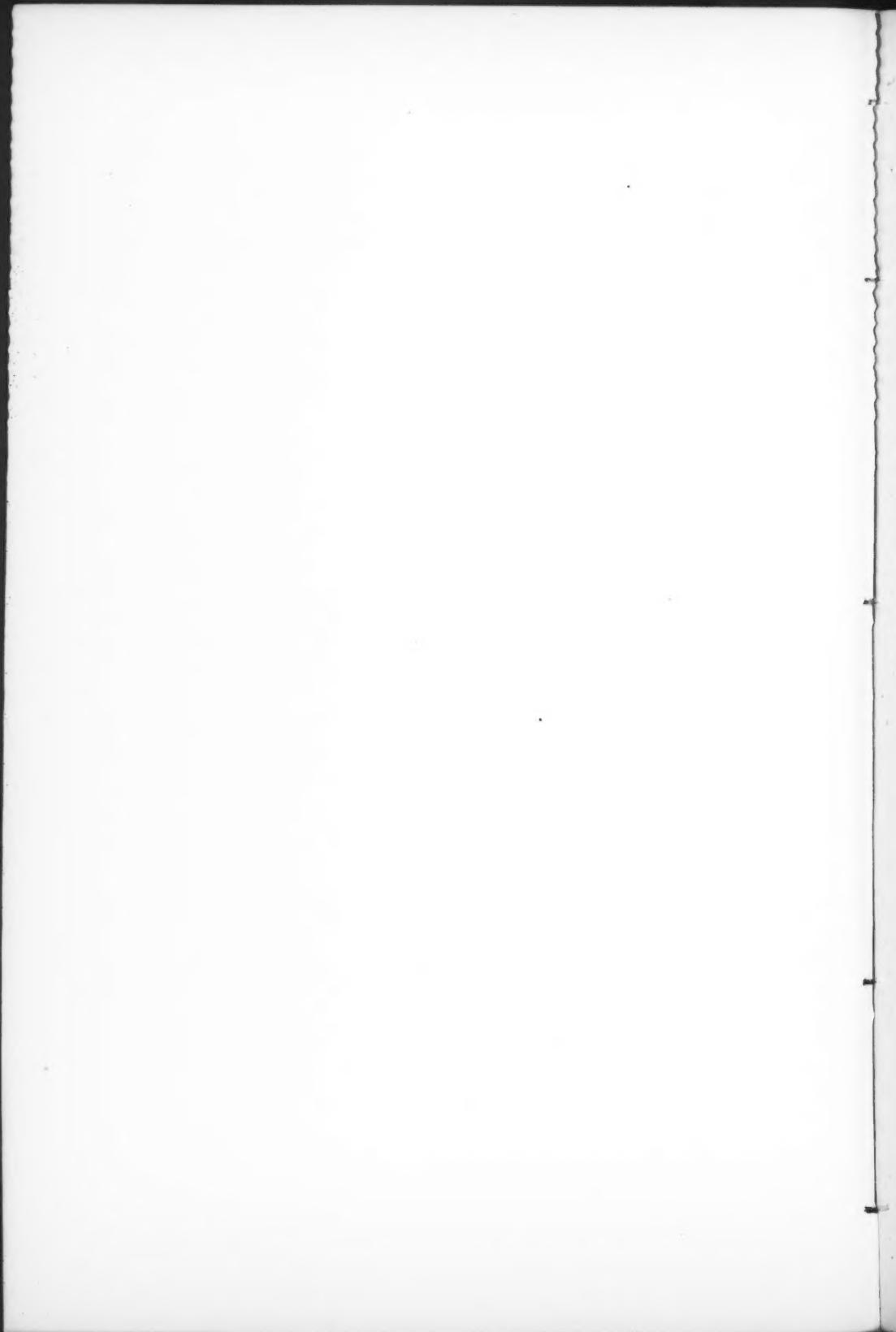
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